● PRINTER RUSH ●

(PTO ASSISTANCE)

Application :	10/017,932	**Examiner :**	Assaf	**GAU :**	2872
From:	S. Winslow	**Location:**	(IDC) FMF FDC	**Date:**	7-19-05

Tracking #: 6109716-8 Week Date: 5-23-05

DOC CODE	DOC DATE	MISCELLANEOUS
☐ 1449		☐ Continuing Data
☐ IDS		☐ Foreign Priority
☐ CLM		☐ Document Legibility
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☐ SRFW		☒ Other BIB 9-8-04
☐ DRW		
☐ OATH		
☐ 312		
☒ SPEC	12-18-01	

[RUSH] **MESSAGE:** 3 lines of continuing data on PALM/BIB sheet but not in specification.

Please advise

Thank you

[XRUSH] **RESPONSE:**

INITIALS:

NOTE: This form will be included as part of the official USPTO record, with the Response document coded as XRUSH.

REV 10/04

APPLICATION FOR PATENT

Inventors: Erez Hasman, Ze'ev Bomzon and Vladimir Kleiner

Title: SPACE-VARIANT SUBWAVELENGTH POLARIZATION GRATING AND APPLICATIONS THEREOF

FIELD AND BACKGROUND OF THE INVENTION

The present invention relates to the production and manipulation of optically polarized light and, more particularly, to a polarization grating whose grating vector varies continuously laterally and applications of this grating.

Laterally varying polarizers have found application in a variety of fields, including optical communication, optical computers, material processing, tight focusing, polarimetry, particle trapping and particle acceleration. For the most part, the transmission axes of these polarizers vary laterally in a discontinuous manner. For example, Bahram Javidi and Takanori Nomura, "Polarization encoding for optical security systems", *Optical Engineering* vol. 39 no. 9 pp. 2439-2443 (2000), perform polarization encoding using a polarization mask that consists of a rectangular array of small linear polarizers, oriented randomly at angles between 0° and 180°. N. Davidson et al., "Realization of perfect shuffle and inverse perfect shuffle transforms with holographic elements", *Applied Optics* vol. 31 no. 11 pp. 1810-1812 (1992), invert an optical perfect shuffle using an interlaced polarizing mask that is a one-dimensional array of linear polarizers oriented alternately at 0° and 90°. Uwe D. Zeitner et al., "Polarization multiplexing of diffractive elements with metal-stripe grating pixels", *Applied Optics* vol. 38 no. 11 pp. 2177-2181 (1999), do optical encryption by polarization multiplexing using an element array, some of whose elements are linear polarizers oriented at 0° and 90°. Gregory P. Nordin et al., "Micropolarizer array for infrared imaging polimetry", *Journal of the Optical Society*

This application claims benefit of serial number 60/258,040 filed December 27,2000,
And claims benefit of serial number 60/304,096 filed July 11,2001,
And claims benefit of serial number 60/306,455 filed July 20,2001.

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BIBDATASHEET

Bib Data Sheet

CONFIRMATION NO. 1490

SERIAL NUMBER	FILING DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
10/017,932	12/18/2001 RULE	359	2872	74/113

APPLICANTS

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Vladimir Kleiner, Nesher, ISRAEL;

** CONTINUING DATA ********** yes

This appln claims benefit of 60/258,040 12/27/2000
and claims benefit of 60/304,096 07/11/2001
and claims benefit of 60/306,455 07/20/2001

** FOREIGN APPLICATIONS ********** n/a

IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** SMALL ENTITY **
** 01/11/2002

Foreign Priority claimed ☐ yes ☑ no 35 USC 119 (a-d) conditions met ☐ yes ☑ no ☐ Met after Allowance Verified and Acknowledged Examiner's Signature Initials	STATE OR COUNTRY ISRAEL	SHEETS DRAWING 26	TOTAL CLAIMS 66	INDEPENDENT CLAIMS 9

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TITLE
Space-variant subwavelength polarization grating and applications thereof

FILING FEE	FEES: Authority has been given in Paper	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of

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